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TITLE: Apparatus for continuous struvite crystallization

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BASIC-ABSTRACT:

NOVELTY - An apparatus for continuous struvite crystallization (magnesium ammonium phosphate:  $MgNH_4PO_4$ ) is provided, which can efficiently treat wastewater containing high concentration nitrogen and phosphorus and toxic compounds by crystallizing phosphorus and nitrogen in wastewater into struvite crystals, thus alleviating loads on subsequent biological treatment.

DESCRIPTION - The apparatus for continuous struvite crystallization

comprises a vertical inlet(1) through which raw wastewater, together with air, Mg, PO<sub>4</sub> and alkali agent, is supplied into the apparatus; a struvite crystallizer(2) in which nitrogen and phosphorus in raw wastewater precipitates into struvite; a hydrocyclone(4) in which a propeller(3) is installed to cause centrifugal force for solid/liquid separation; an overflow(5) through which struvite crystals are settled downward; a struvite crystal inlet(7) through which a portion of struvite crystals is introduced into the struvite crystallizer to act as crystallization nuclei; a sludge hopper(6); a struvite crystal drain(9); a weir(10) over which supernatant after solid/liquid separation is discharged; and an air vent(11) through which air supplied from the vertical inlet exits to atmosphere.

CHOSEN-DRAWING: Uwq.1/10

TITLE-TERMS: APPARATUS CONTINUOUS CRYSTAL

DERWENT-CLASS: D15

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